Linda's T'ai Chi Weekly Handout November 26, 2023

Do Masks Work?

First, thank you all for continuing to wear masks during class. I know they can a bit tedious but I believe they have protected us. I am proud of the fact that during these past years of covid, there has never been an outbreak in any of my classes. That is due to the fact that you stay home when you are not feeling well and/or when you have had a potential exposure to covid 19. I also believe our masking has provided a level of protection. The question then arises- do masks actually work? Do masks protect us and others from getting ill?

This question has been debated since the start of the pandemic. Unfortunately, it can not be answered with a simple yes, they do, no they don't. The articles that you may have read that state that masks do not work fail to test type of mask, how it is worn and under what circumstances. A similar question could be asked about seat belts. Do seat belts work- do they save lives? Like masks, this question cannot be answered with a simple, yes, they do, no they don't.

The answer to both masks and seat belts, is – it depends. Let's start with seat belts. Seat belts will work if there are a number of variables in place. First, they work if worn correctly. The lower belt has to be placed over the pelvis. If placed over the waist or

abdomen, they will not work to save a life. In fact, they can cause internal damage if placed over the waist or abdomen. Whether a seat belt will work also depends on the speed of the vehicle and the rate of speed of the collision. Seat belts also have to be fitted correctly- not too loose and not too tight. The clasp has to be locked into place.

So, seat belts work if worn properly and if the rate of the collision including – head-on, roll-overs for example do not exceed the viability of the belt. There are some collisions that are not survivable regardless of seat belts or air bags.

To answer the question of whether masks work depend on a number of variables as well. Protection from air borne bugs like covid are based on these variables:

1. Density- how many people in a given space. More people- higher level of spread
2. Air flow- how much air flow and filtration in a given space- better the filtration, the less spread
3. Viral load- how many viruses in the air at a given time. The CDC used to measure community spread from low to medium to high.
4. Personal protection- the right mask at the right time.

Masks are key to protecting ourselves from air borne bugs. But, keep in mind, no mask is effective 100% of the time. The best mask is the N95 and that has a 5% failure rate. And, if the area that you are in is dense, has poor air flow and the viral load is high, any mask may fail. If the mask is moist, dirty or damaged it will not work.

To be effective, a mask must the fitted. No gaps between the face and the mask that allow bugs to enter. The best mask, the N95 can be rendered ineffective if it is not fitted properly and if the wearer has a beard. Both a poor fit and a beard allows the virus to enter.

The least effective masks are gators. The weave is too loose and there are gaps between the gator and the face that allows the virus to reach the nose and mouth. They are better than no mask. The next least effective are cloth mask which have the same

problems. They do not fit snugly on the face to ward-off the virus from getting to the nose or mouth.

The next is the surgical mask. These come in sizes from small to large so if you choose this mask make sure you get the correct size to fit your face. These are effective when worn properly and in the right environment.

The best defense against air borne illnesses like covid 19 is the N95 respirator. And, that is only 95% effective and only if it is work properly. (I am excluding the air-powered respirators seen in hospital settings or other settings that require complete air exchange)

I wear a surgical mask when teaching at the Firehouse. We have low density; the air filtration system is very good (a MERV rating of 13)- filtrates small particles at 90% and our students are not sick. In my personal life, I wear an N95 if I am in a situation that may have a lot of people that I do not know. Actually, I avoid these situations even today.

With all of that said, I again appreciate the fact that you graciously agree to mask to ensure the safety and health of everyone.

Linda

Citations: CDC, Mayo Clinic, National Institute of Standards and Technology. John Hopkins. Also, as the former Director of Public Health in Ventura County, CA I am familiar with masking protocols.